7. The microfluidic sorting device of claim 6, wherein the magnetic field gradient generator comprises two permanent magnets located on opposite sides of the plurality of ferromagnetic elements.

8. The microfluidic sorting device of claim 5, wherein the magnetic field gradient generator comprises an electromagnet proximate the plurality of ferromagnetic elements.

9. The microfluidic sorting device of claim 5, wherein the plurality of ferromagnetic elements are disposed within a fluid pathway of the sorting station to allow fluid contact between the ferromagnetic elements and the sample stream.

10. The microfluidic sorting device of claim 5, wherein the ferromagnetic elements are micropatterned nickel elements.

11. The microfluidic sorting device of claim 5, wherein the plurality of ferromagnetic elements comprises one or more ferromagnetic strips

12. The microfluidic sorting device of claim 5, wherein the plurality of ferromagnetic elements comprises one or more pins or pegs.

13. The microfluidic sorting device of claim 1, wherein the sorting device comprises at least two magnetic field gradient generators.

14. The microfluidic sorting device of claim 13, wherein the at least two magnetic field gradient generators are located in fluid paths for two separate sample streams on opposite sides of a fluid path for the buffer stream.

15. The microfluidic sorting device of claim 13, wherein the at least two magnetic field gradient generators comprise two permanent magnets shared by the at least two magnetic field gradient generators.

16. The microfluidic sorting device of claim 1, wherein the at least one outlet channel comprises:

(i) a first outlet channel for collecting at least a portion of the buffer stream comprising purified target species; and

(ii) a second outlet channel for collecting at least a portion of the sample stream.

17. The microfluidic sorting device of claim 16, wherein the second outlet channel is sized and positioned to collect a separate portion of the buffer stream.

18. The microfluidic sorting device of claim 1, wherein the at least one outlet channel comprises:

(i) a first outlet channel for collecting at least a portion of the buffer stream comprising purified target species; and

(ii) a second outlet channel and a third outlet channel for collecting separate streams of the sample.

19. The microfluidic sorting device of claim 18, wherein the second and third outlet channels are located on opposite sides of the first outlet channel.

20. The microfluidic sorting device of claim 1, wherein the magnetic field gradient generator is configured to temporarily capture the magnetic particles and then release said magnetic particles to the at least one outlet channel.

21. A microfluidic sorting device comprising:

(a) at least one inlet channel configured to provide separate streams of

(i) a sample comprising magnetic particles and non-magnetic particles, and

(ii) a buffer that is substantially free of the sample;

(b) a sorting station fluidly coupled to said at least one inlet and located in a path of the sample stream;

(c) a magnetic field gradient generator for interacting with an external magnetic field to produce a change in magnetic field gradient in the sorting station and thereby deflecting the magnetic particles toward the buffer stream; and

(d) at least one outlet channel configured to separately receive the buffer stream with deflected magnetic particles and a waste stream containing said sample at least partially depleted of the magnetic particles.

22. A method of purifying a target species in a sample, the method comprising:

(a) providing the sample to at least a first inlet channel of a microfluidic sorting device, wherein the sample includes magnetic particles having an affinity for the target species;

(b) providing a buffer stream to the microfluidic sorting device;

(c) magnetizing a magnetic field gradient generator to divert at least some of the magnetic particles from the sample to the buffer stream; and

(d) collecting at least a portion of the buffer stream comprising purified target species with at least some of the magnetic particles at a collection outlet channel.

23. The method of claim 22, wherein providing the sample comprises providing two sample streams on opposite sides of the buffer stream in the microfluidic sorting device.

24. The method of claim 22, wherein the magnetic field gradient generator comprises a plurality of ferromagnetic elements.

25. The method of claim 24, wherein the ferromagnetic elements comprise micropatterned ferromagnetic material on the microfluidic device.

26. The method of claim 22, wherein magnetizing the magnetic field gradient generator comprises applying an external magnetic field from a permanent magnet or an electromagnet to the magnetic field gradient generator.

27. The method of claim 22, further comprising detecting the purified target species in the buffer stream collected in (d).

28. The method of claim 22, further comprising amplifying a nucleic acid of the target species in the microfluidic sorting device.

29. The method of claim 22, further comprising lysing cells in the microfluidic sorting device, wherein at least some of the cells comprise the target species.

30. The method of claim 22, further comprising separating genetic material from viruses in the microfluidic sorting device, wherein at least some of the viruses comprise the target species.

31. The method of claim 22, wherein collecting at least a portion of the buffer stream comprising purified target species comprises recovering at least 50% of the target species in the sample.

32. A method of sorting magnetic species in a sample, the method comprising:

(a) providing the sample to at least a first inlet channel of a microfluidic sorting device;

(b) providing a buffer stream to the microfluidic sorting device;

(c) magnetizing a magnetic field gradient generator to divert at least some of the magnetic species from the sample to the buffer stream; and

(d) collecting at least a portion of the buffer stream comprising at least some of the magnetic species at a collection outlet channel.